REMARKS

Applicant has amended the description to correct an obvious typographical error.

Claims 1, 9-10, 13 and 21 have been amended. Claims 11-12, and 15 have been canceled without prejudice.

More particularly, Claims 1 and 21 have been amended to incorporate the features of Claims 11 and 12, which have been canceled without prejudice.

Claims 9 and 10 have been amended to be in independent form and to include the features of the base Claim 1 and intervening Claim 2. Claim 13 has been amended to depend from Claim 9.

All claim amendments are directed towards matters of form and thus are unrelated to patentability.

In the Office Action Summary, the Examiner indicates in error that Claims 1-14 and 21-25 are pending in the Application. For purposes of clarifying the record, Applicant notes that at the time of Examination, Claims 1-**15** and 21-25 were pending in the Application. As set forth above, Claims 11-12, and 15 have been canceled without prejudice in this Amendment. Accordingly, Claims 1-10, 13-14, 21-25 are pending in the Application.

Claims 1-4, 7, 8, 13 and 14 are novel over Gramann et al. (5,907,151).

As discuss below, amended Claim 1 is allowable over Gramann et al. Claims 2-4, 7, 8, which depend from Claim 1, are allowable over Gramann et al. for at least the same reasons as Claim 1.

As further discussed below, Claim 9, from which Claims 13 and 14 depend, is allowable over Gramann et al. Claims 13 and 14, which depend from Claim 9, are allowable over Gramann et al. for at least the same reasons as Claim 9.

For the above reasons, Applicant respectfully request reconsideration and withdrawal of this rejection.

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Claims 5, 6, 9, 10, are patentable over Gramann et al.

The features of Claims 11 and 12 have been incorporated into Claim 1. Accordingly, the rejection of Claims 11 and 12 shall be discussed as applied to amended Claim 1.

Regarding Claims 11 and 12, the Examiner admits:

> In re claims 11 and 12, while **Gramann fails to teach** a bead forming a seal between a periphery of said image sensor and said base surface (claim 11) such that said image sensor, said bead, and said base surface define a cavity, said active area being located within said cavity (claim 12), … (Office Action, page 5, emphasis added.)

To cure this deficiency in Gramann et al., the Examiner asserts:

> … it would have been obvious to one of ordinary skill in the art at the time of the invention to form a bead such that a cavity is formed because forming beads around the periphery of a chip is conventionally known in the art. (Office Action, page 5.)

Initially, Applicant notes that the Examiner asserts that "forming beads around the periphery of a chip is conventionally known in the art", but does not provide any evidence to support the Examiner's statement. Should the Examiner maintain this rejection, Applicant respectfully requests that the Examiner provide evidence to support the Examiner's statement.

Further, Applicant respectfully submits that one of skill in the art would have no motivation to modify Gramann et al. to form a bead such that a cavity is formed as asserted by the Examiner. More particularly, Gramann et al. teaches:

> The chip cover 27 is used, in particular, to protect the body 1 against moisture and against mechanical damage. (Col. 6, line 43-45.)

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Accordingly, since Gramann et al. already provides protection by the chip cover 27, the function of forming a bead is obviated. Thus, one of skill in the art would have no motivation to make such a modification of Gramann et al.

As set forth in the MPEP § 2143.01:

> The mere fact that references <u>can</u> be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. (page 2100-126, Rev. 1. Feb. 2003, emphasis in original.)

For at least the above reasons, Gramann et al. does not teach or suggest:

> An image sensor package comprising:
> a transparent substrate comprising a base surface and a pocket sidewall;
> a trace coupled to said base surface;
> an image sensor comprising a first surface comprising an active area and a bond pad;
> a bump coupling said bond pad to said trace, wherein said image sensor is located within an image sensor pocket of said transparent substrate defined by said base surface and said pocket sidewall; and
> **a bead forming a seal between a periphery of said image sensor and said base surface, wherein said image sensor, said bead, and said base surface define a cavity, said active area being located within said cavity,**

as recited in amended Claim 1, emphasis added. Accordingly, Claim 1 is allowable over Gramann et al. Claims 5 and 6, which depend from Claim 1, are allowable for at least the same reasons as Claim 1.

With respect to Claims 9 and 10, the Examiner admits:

> … Gramann teaches the second surface of the sensor **to be formed below** the rear surface of the transparent substrate … (Office Action, page 5, emphasis added.)

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To cure this deficiency of Gramann et al., the Examiner asserts:

> … it would have been obvious to one of ordinary skill in the art at the time of the invention to form the second surface coplanar with or above the rear surface of said transparent substrate because, barring a showing of unexpected results, **the location of the sensor in the package is a mere matter of design choice**. (Office Action, page 5, emphasis added.)

The Examiner's assertion is respectfully traversed. Gramann et al. teaches:

> The terminal areas 16, 17 **define a contacting plane or contact-making plane (indicated by the dot-dashed line 14)**, the distance of which from the trench floor 9 **is greater than the maximum height of the body 1 including the connecting conductor 26 and an optionally provided chip cover 27**, … (Col. 6, lines 37-41, emphasis added.)

Accordingly, Gramann et al. specifically teaches the criticality that the "second surface" of the body 1 is below the "rear surface of said transparent substrate". Further, for purposes of argument, if Gramann et al. was modified "to form the second surface coplanar with or above the rear surface of said transparent substrate" as asserted by the Examiner, the "second surface" or the "connecting conductor 26" would protrude into the "contacting plane or contact-making plane (indicated by the dot-dashed line 14)" of Gramann et al. thus complicating or preventing the ability to form interconnections with the terminal areas 16, 17.

For at least the above reasons, Gramann et al. does not teach or suggest:

> An image sensor package comprising:
> a transparent substrate comprising:
> a base surface;
> a pocket sidewall; and

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a rear surface, said pocket sidewall extending between said base surface and said rear surface;

a trace coupled to said base surface, wherein said trace extends from said base surface, along said pocket sidewall, and to said rear surface;

an image sensor comprising:

a first surface comprising an active area and a bond pad; and

a second surface coplanar with said rear surface of said transparent substrate; and

a bump coupling said bond pad to said trace, wherein said image sensor is located within an image sensor pocket of said transparent substrate defined by said base surface and said pocket sidewall,

as recited in amended Claim 9, emphasis added. Accordingly, Claim 9 is allowable over Gramann et al. Claim 10 is allowable for reasons similar to Claim 9.

For the above reasons, Applicant respectfully requests reconsideration and withdrawal of this rejection.

Claims 21-25 are patentable over Gramann et al. in view of Lee et al. (5,986,334).

For reasons similar to those discussed above regarding Claim 1, Gramann et al. does not teach or suggest:

An image sensor package comprising:

a transparent substrate comprising:

a base;

a pocket ring coupled to said base;

an image sensor comprising a first surface comprising an active area and a bond pad, wherein said image sensor is located within an image sensor pocket of said transparent substrate; and

a bead forming a seal between a periphery of said image sensor and said base, wherein said image sensor, said bead, and said base define a cavity, said active area being located within said cavity,

as recited in amended Claim 21, emphasis added. Lee et al. does not cure this deficiency in Gramann et al. Accordingly, Claim 21 is allowable over Gramann et al. in view of Lee et al.

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Claims 22-25, which depend from Claim 21, are allowable for at least the same reasons as Claim 21.

For the above reasons, Applicant respectfully requests reconsideration and withdrawal of this rejection.

CONCLUSION

Claims 1-10, 13-14, 21-25 are pending in the application. For the foregoing reasons, Applicant respectfully requests allowance of all pending claims. If the Examiner has any questions relating to the above, the Examiner is respectfully requested to telephone the undersigned Attorney for Applicant.

CERTIFICATE OF MAILING
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on June 23, 2004.

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Date of Signature

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